

SUBSTITUTE SPECIFICATION

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SPECIFICATION

5 ANTENNA, AND RADIO-CONTROLLED TIMEPIECE, KEYLESS ENTRY
SYSTEM AND RFID SYSTEM COMPRISING IT

FIELD OF THE INVENTION

[0001]

10 The present invention relates to a magnetic sensor-type, radio wave-
receiving antenna suitable for radio-controlled timepieces receiving radio
waves including time information for time adjustment, smart keyless entry
systems for detecting the access of owners by radio waves to open keys of
15 automobiles or a houses, etc. (hereinafter referred to as “keyless entry
systems”), or RFID tag systems for giving and receiving information by
modulation signals carried by radio waves (hereinafter referred to as “RFID
systems”), etc.

BACKGROUND OF THE INVENTION

20 [0002]

A radio-controlled timepiece receiving time information conveyed by
a carrier wave having a predetermined frequency to adjust its own time based
on that time information has been finding various applications such as clocks,
wristwatches, etc.

25 [0003]

The radio waves used for the radio-controlled timepieces, etc. are 40-
200 kHz, having as long wavelengths as several kilometers. Because
antennas as long as more than several hundred meters are needed to
efficiently receive these radio waves, it is practically difficult to use them in